IX. Appendices

Appendix A: Defining Virginia's 8 MSA and 4 Non-MSA Areas

Charlottesville MSA
Albemarle County
Fluvanna County
Greene County
Charlottesville City

Danville MSA
Pittsylvania County
Danville City

Johnson City-Kingsport-Bristol, TN-VA MSA (Virginia Portion)
Scott County
Washington County
Bristol City

Lynchburg MSA
Amherst County
Bedford County
Campbell County
Bedford City
Lynchburg City

Norfolk-Virginia Beach-Newport News, VA-NC MSA (Virginia Portion)
Gloucester County
Isle of Wight County
James City County
Mathews County
York County
Chesapeake City
Hampton City
Newport News City
Norfolk City
Poquoson City
Portsmouth City
Suffolk City
Virginia Beach City
Williamsburg City

Richmond-Petersburg MSA
Charles City County
Chesterfield County
Dinwiddie County
Goochland County
Hanover County
Henrico County
New Kent County
Powhatan County
Prince George County
Colonial Heights City
Hopewell City
Petersburg City
Richmond City

Roanoke MSA
Botetourt County
Roanoke County
Roanoke City
Salem City

Washington DC-MD-VA-WV PMSA (Virginia Portion)
Arlington County
Clarke County
Culpeper County
Fairfax County
Fauquier County
King George County
Loudoun County
Prince William County
Spotsylvania County
Stafford County
Warren County
Alexandria City
Fairfax City
Falls Church City
Fredericksburg City
Manassas City
Manassas Park City

Northeast Virginia
Accomack County
Caroline County
Essex County
King & Queen County
King William County
Lancaster County
Middlesex County
Northampton County
Northumberland County
Richmond County
Westmoreland County

Northwest Virginia
Alleghany County
Augusta County
Bath County
Frederick County
Highland County
Louisa County
Madison County
Nelson County
Orange County
Page County
Rappahannock County
Rockbridge County
Rockingham County
Shenandoah County
Buena Vista City
Clifton Forge City
Covington City
Harrisonburg City
Lexington City
Staunton City
Waynesboro City
Winchester City

Southside Virginia
Amelia County
Appomattox County
Brunswick County
Buckingham County
Charlotte County
Cumberland County
Greensville County
Halifax County
Lunenburg County
Mecklenburg County
Nottoway County
Prince Edward County
Southampton County
Surry County
Sussex County
Emporia City
Franklin City

Southwest Virginia
Bland County
Buchanan County
Carroll County
Craig County
Dickenson County
Floyd County
Franklin County
Giles County
Grayson County
Henry County
Lee County
Montgomery County
Patrick County
Pulaski County
Russell County
Smyth County
Tazewell County
Wise County
Wythe County
Galax City
Martinsville City
Norton City
Radford City

Appendix B: Defining Virginia's 7 Regions for the Telephone Survey Data Analyses

Northern Virginia
Arlington County
Fairfax County
Loudon County
Prince William County
Alexandria City
Fairfax City
Falls Church City
Manasses City
Manasses Park City

Central Virginia
Albemarle County
Amherst County
Bedford County
Campbell County
Charles City County
Chester County
Culpepper County
Fauquier County
Fluvanna County
Greene County
Hanover County
Henrico County
Louisa County
Madison County
Nelson County
New Kent County
Orange County
Powhatan County
Rappahannock County
Bedford City
Lynchburg City
Charlottesville City
Richmond City

Bay Area
Accomack County
Caroline County
Essex County
Gloucester County
King and Queen County
King George County
King William County
Lancaster County
Matthews County
Middlesex County
Northampton County
Northumberland County
Richmond County
Spotsylvania County
Stafford County
Westmoreland County
Fredericksburg City

Tidewater Area
Isle of Wight County
James City County
Southampton County
York County
Chesapeake City
Franklin City
Hampton City
Newport News City
Norfolk City
Poquoson City
Portsmouth City
Suffolk City
Virginia Beach City
Williamsburg City

Southside
Amelia County
Appomattox County
Brunswick County
Buckingham County
Charlotte County
Cumberland County
Dinwiddie County
Greensville County
Halifax County
Henry County
Lunenburg County
Mecklenburg County
Nottoway County
Patrick County
Pittsylvania County
Prince Edward County
Prince George County
Surry County
Sussex County

Shenandoah Valley
August County
Bath County
Clarke County
Frederick County
Highland County
Page County
Rockingham County
Shenandoah County
Warren County
Buena Vista City
Harrisonburg City
Lexington City
Staunton City
Waynesboro City
Winchester City

Southwest Virginia
Alleghany County
Bland County
Botetourt County
Buchanan County
Carroll County
Craig County
Dickenson County
Floyd County
Franklin County
Giles County
Grayson County
Lee County
Montgomery County
Pulaski County
Roanoke County
Rockbridge County
Russell County
Scott County
Smyth County
Tazewell County
Washington County
Wise County
Wythe County
Bristol City
Clifton Forge City
Covington City
Galax City
Norton City
Radford City
Roanoke City
Salem City

Appendix C: Telephone Survey Methodology: Sampling and Weighting

The Urban Institute contracted with the Gallup Organization to conduct a telephone survey of 1,000 individuals statewide of the non-institutionalized adult population age 18-65 residing in Virginia. The Urban Institute designed and drafted the 12-minute survey instrument in conjunction with Gallup. The telephone survey gathered opinion data from individuals about their (1) current employment (e.g., full- or part-time) and skills, (2) future employment and training needs, (3) their plans for working or retiring in Virginia in the future (e.g., phased retirement, post-retirement employment), (4) work-related quality of life needs and preferences (e.g., benefit needs, retirement needs, workplace environment needs), and (5) demographic information for 2003.

The Gallup Organization obtained 1,004 completed cases during the five-week field period of July 28, 2003 to August 29, 2003. The following are statistics from the survey:

- Total numbers dialed: 5,299

- Incidence rate: 77 percent (percent eligible to participate)

- Working residential number rate: 61 percent (percent of numbers that were not business or disconnects)

- Refusal rate: 5 percent

- Number of completes: 1,004

- Response rate:[1] 40 percent

Sampling

The sampling frame used for this telephone survey was a directory-based frame. The directory-based frame yields a significantly higher rate of working residential numbers (WRNs). Samples drawn from such lists do not include unlisted (or unpublished) telephone numbers, and studies of telephone households with and those without published numbers suggest that estimates based on such samples may be biased.

A telephone number in the United States is 10 digits long (AAA EEE XXXX), where the first three digits are the area code, the second three are the exchange, and the last four are the

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[1] The response rate calculation is based on the standard CASRO definition (Council of American Survey Research Organizations).

number within the exchange. The area code, three-digit prefix and the first two digits of the four-digit suffix specify a 100-bank containing 100 telephone numbers. Following the Casady-Lepkowski (1993) truncated design, Gallup drew an RDD (Random Digit Dialing) sample of specified size from the high-density stratum.

Gallup obtained a sample of telephone numbers and divided the sample into systematic random sub samples called "replicates." Gallup used approximately 5,299 household telephone numbers, large enough to yield the required number (1,000) of interviews with a high response rate (yielded a 40 percent response rate, a 61 percent working residential number rate, and a 77 percent eligibility rate). The replicates were used to control the sample and to maintain flexibility while ensuring high response rates. Gallup released replicates sequentially using sample release specifications prepared by the Study Director. The Study Director and Senior Statistician monitored the release of replicates based on internal call status reports accessed online daily. This procedure allowed interviewing supervisors to maintain a high response rate.

Gallup ordered 10,000 telephone numbers from SSI, yielding about 7,000 numbers after screening out the known Disconnects and Business numbers. After sampling a telephone household, Gallup selected one adult from all adults living in the sampled household. When more than one household member was eligible for a survey, the adult with the 'most recent birthday' was selected to be surveyed.

Gallup used a 5+5 call design to complete the interviews, meaning that 5 attempts were made to contact a household, and upon contact, up to an additional 5 attempts will be made to seek cooperation.

Gallup pretested the questionnaire with nine random survey respondents to assess the effectiveness and performance of the instrument at meeting the study requirements. Minor changes were made to the instrument based on the pretest and one new question was added.

Weighting

The survey data collected are weighted by Gallup to make the total weighted count of 4,597,000 match the target 18-65 population size within the following domains of interest:

- Age (18-24, 25-34, 35-44, and 45-65),

- Race and ethnicity (non-Hispanic white, non-Hispanic black, and others),

- Gender, and

- Seven regions of Virginia (see Appendix B for a definition of the seven regions).

The sample data were weighted to compose estimates. Sampling weights were attached to each survey record and the final weight assigned to any case was the product of the weights generated at several stages of the weighting process. The first step was to construct the base-weight, the inverse of the probability of selection. This was to correct for unequal selection probabilities of the different units in the sample. In this study, the selection probability at the very first stage of selection (of telephone numbers) was the same. However, the difference in the number of residential telephone lines reaching different telephone households created unequal selection probabilities at the household level. Within a household, the number of adults living in the household obviously varied resulting in different selection probabilities. The base-weight (w_i) assigned to the ith (i=1, 2, …, n) sampled unit was calculated as $w_i = (a_i / t_i)$ where a_i was the number of eligible adult members (between the ages of 18 and 65) living in respondent's household and t_i the number of residential telephone lines reaching that household. To reduce variability in the base weights, the values of a_i and t_i were truncated at 3 and 2 respectively after examining the distribution of these variables in the sample.

The next step was post-stratification weighting to make the sample reflect the population it is intended to represent. Post-stratification is a way of improving estimators by proper utilization of ancillary information. The state of Virginia was divided into seven geographic regions – Northern Virginia, Central Virginia, Bay Area, Tidewater Area, Southside, Shenandoah Valley, and Southwest Virginia. (Please refer to Appendix B for definitions of these regions in terms of counties and independent cities.) Within each of these seven regions, post-stratification weights were created so that the final weighted distribution of the sample data for the variables age, gender, and race/ethnicity matched, to the extent possible, the corresponding distributions (population distributions) of those variables in each region. This was achieved using a raking program for simultaneous adjustment of different target numbers (or proportions). The target numbers (or population distributions) for each region were obtained from the latest U.S. Census data for the state of Virginia. For the variable Age, the distribution was adjusted for the following age groups: 18-24, 25-34, 35-44, and 45-65. For race/ethnicity, three different racial and ethnic groups (non-Hispanic white, non-Hispanic African American, and others) were considered.

After the post-stratification process, the distribution of the sampling weights was examined within each region to see if any trimming of extreme weights was necessary. As mentioned before, the number of telephone lines and the number of adults were truncated for constructing base weights. There were very few relatively large weights after the post-

stratification stage. Within each region, weights outside the {Mean $\pm$ 3* (standard deviation)} limits were truncated. The trimming of weights, therefore, was minimal and had no significant effect on the overall distribution of weights. Finally, within each region, the trimmed weights were multiplied by a projection factor so that the sum of weights within each region equaled the total adult population (between the ages of 18 and 65) for that region.